

Dr. Mahananda Chutia (Curriculum Vitae)



Dr. Mahananda Chutia, M.Sc., Ph.D., Post Doctorate Fellow (UK).

Scientist – D & DBT Overseas Associate
Muga Eri Silkworm Seed Organization (MESSO)
Central Silk Board, Ministry of Textiles: Govt. of India
Khanapara, Guwahati-781022, Assam (India)
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Educational Qualification:

M.Sc. in Botany (Microbiology) from Gauhati University (2003).
Ph.D. in Biotechnology from Dept. of Biotechnology, Gauhati University (2012).
Post Doctorate Fellow (Seri-biotechnology/phage therapy) in University of Leicester, UK.

Area of research interest:

- Host-pathogen-insect interaction, disease epidemiology and management
- Bacteriophage Biology and Phage therapy; Seri-biotechnology and interdisciplinary science.

Professional Experiences:

- Scientist - D in Muga Eri Silkworm Seed Organization, Central Silk Board, Govt. of India, Guwahati, Assam w.e.f. 4th July 2021 to till date.
- Scientist - D in Central Muga Eri Research & Training Institute (CMER&TI), Central Silk Board, Govt. of India, Jorhat, Assam w.e.f. 1st July 2018 to 3rd July 2021..
- Scientist - C in Central Muga Eri Research & Training Institute (CMER&TI), Central Silk Board, Govt. of India, Jorhat, Assam w.e.f. 26th February 2014 to 30th June 2018.
- Honorary Visiting Fellow in the Department of Infection Immunity and Inflammation, University of Leicester, UK from February 2015 to January 2016.
- Scientist - B in Central Muga Eri Research & Training Institute (CMER&TI), Central Silk Board, Govt. of India, Jorhat, Assam w.e.f. 19th January 2009 to 25th February 2014.
- CSIR-Senior Research Fellow in the Dept. of Biotechnology, Gauhati University, Ghy (2008-2009).
- Research Fellow (Project Assistant) in North East Institute of Science & Technology (NEIST), Jorhat, Assam (2005-2008)
- Guest Faculty in the Dept. of Botany, Nowgong College, Assam, India (2005-2007).

Academic recognition/ awards etc.:

- 1) Best Scientist- R&D (Vanya) by Central Silk Board, Bangalore (2020).
- 2) Dr. Ananta Bora Young Scientist Award, Botanical Society of Assam (2020).
- 3) Rastriya Gaurav Award, India International Friendship Society, New Delhi (2020).
- 4) Recognized as the Ph.D. Guide (Life Science) under the Faculty of Science, Dibrugarh University.
- 5) Recognized as the Ph.D. Guide (Botany) under the Faculty of Science, Gauhati University.
- 6) Dr. S.N. Choudhury Memorial Award - Best Scientist category (2016).
- 7) Honorary Visiting Fellow, University of Leicester, UK (2015-16).
- 8) DBT Overseas Associateship (2014) in UK.
- 9) DBT- Rapid Grant for Young Investigator (RGYI) award in 2012.
- 10) Best poster presentation award in the International Consultative Meeting on "Seri-biotechnology-2012" (ICMS-2012) held at IBSD, Imphal during 5-7th December, 2012.
- 11) Awarded CSIR - Senior Research Fellowship (SRF) in Life Sciences in 2007-08.
- 12) University Grant Commission (UGC) recognized NET/SLET (Eligibility Test for Lectureship in Universities and Colleges) qualified in 2004.

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- 13) 1st class 1st position (University topper) with distinction in B.Sc. from Dibrugarh University, Assam, INDIA in 2000.
- 14) National Merit Scholarship for M.Sc. in 2000.

Academic/Professional Assignment and responsibilities

1. Editor In Chief, *Bio-Quest* (a scientific magazine), published by Advanced Level Institutional Biotech Hub, CMER&TI, Lahdoigarh.
2. Advisor /Member Editorial Board, Heilyon – Microbiology, Cell Press.
3. Executive Board Member, Society for Bacteriophage Research and Therapy, India.
4. Member, Editorial Board, SN Applied Sciences, Springer Nature publications.
5. Member Editorial Board, Journal of Food, Agriculture and Environment (2013-2020).

Reviewers of International journals

International Journal of Tropical Insect Science (Springer); International Journal of Food Microbiology (Elsevier); Heilyon – Microbiology, Cell Press; European Food Research and Technology (Springer); Archives of Microbiology, (Springer); SN Applied Sciences (Springer); Tropical Plant Pathology, (Springer); Journal of American Oil Chemists Society (Springer); Environmental Monitoring and Assessment (Springer); Bulletin of Insectology; Plant Science Today, Horizon e-publishing group; International Journal of Microbiological Research; African Journal of Microbiological Research; Journal of Medicinal and Pharmacy Research etc.

Membership in Professional Societies / Bodies

1. Life Member, Society for Bacteriophage Research and Therapy, Varanasi, India (Membership ID: SBRTLM00044)
2. Life Member, Society of Bio-safety, India, Bhopal.
3. Life Member, Botanical Society of Assam, Guwahati, Assam.
4. Secretary, Silk Board Nature Club, CSB-CMER&TI, Lahdoigarh.
5. North East India Research Forum (A worldwide forum of Researcher from NE India).

Selected / Recent Publications (Maximum 10)

1. B. Devi, M.N. Kumar, M. Chutia, N. Bhattacharyya (2022) Abiotic and biotic stress challenges of cassava in changing climate and strategies to overcome: A review. ***Scientia Horticulturae*** 305, 17: 111432. <https://doi.org/10.1016/j.scienta.2022.111432> [Elsevier; IF 4.342]
2. M. Kalita, M Chutia, DK Jha, G Subrahmanyam (2022) Mechanistic understanding of *Gordonia* sp. in biodesulfurization of organosulfur compounds. ***Current Microbiology***, 79(3): 82. doi: 10.1007/s00284-022-02770-3. [Springer; IF: 2.343]
3. B. Devi, M. Chutia, N. Bhattacharyya (2021) Food plants diversity, distribution and nutritional aspects of the endemic golden silk producing silkworm, *Antheraea assamensis* (Helfer) – a review. ***Entomologia Experimentalis et Applicata***, 169: 237-248. [Wiley; IF: 2.433]
4. JY Nale, M Chutia, JKJ Cheng, M Clokie (2020) Refining the *Galleria mellonella* model by using stress markers genes to assess *Clostridioides difficile* infection and recuperation during phage therapy. ***Microorganisms (MDPI)***, 2020, 8, 1306; doi:10.3390/microorganisms8091306; IF: 4.926].
5. G. Subrahmanyam, V. Gowri Esvaran, K.M. Ponnuvel, W. Hassan, M. Chutia, R. Das (2019) Isolation and molecular identification of microsporidian pathogen causing nosemosis in Muga silkworm,

- Antheraea assamensis* Helfer (Lepidoptera: Saturniidae). **Indian Journal of Microbiology**, 59: 525–529 [Springer; Impact factor 2.461].
6. J.Y. Nale, M. Chutia, P. Carr, P.T. Hickenbotham, M.R. Clokie (2016) 'Get in early'; biofilm and wax moth (*Galleria mellonella*) models reveal new insights into the therapeutic potential of *Clostridium difficile* bacteriophages. **Frontiers in Microbiology**, 7:1383 (1-16) (<http://dx.doi.org/10.3389/fmicb.2016.01383>), [Impact Factor 6.064].
 7. MC Sarmah, M Chutia*, K Neog, R Das, G Rajkhowa, SN Gogoi (2011) Evaluation of promising castor genotype in term of agronomical and yield attributing traits, biochemical properties and rearing performance of eri silkworm, *Samia ricini* (Donovan). **Industrial Crops and Products**, 34: 1439–1446 [Elsevier; IF 6. 449].
 8. R Das, M Chutia*, K Das, DK Jha (2010) Factors affecting sporulation of *Pestalotiopsis disseminata* causing grey blight disease of *Persea bombycina* Kost., the primary food plant of muga silkworm. **Crop Protection**, 29:963-968 [Elsevier; IF 3.036].
 9. P Deka Bhuyan, M Chutia*, MG Pathak, P Boruah (2010) Effect of essential oils from *Lippia geminata* H.B. Ksyn and *Cymbopogon jwarancusa* (Jones) Schult on *in vitro* growth and sporulation of two rice pathogen causing brown spot and sheath blight disease. **Journal of the American Oil Chemists' Society**, 87:1333–1340 [Springer; IF 1.952].
 10. M Chutia, P Deka Bhuyan, MG Pathak, TC Sharma and P Boruah (2009) Antifungal activity and chemical composition of *Citrus reticulata* Blanco essential oil against phytopathogens from North East India. **LWT-Food Science and Technology**, 42: 777–780 [Elsevier; IF 6.056].

Book Chapter /Proceedings in national and international symposiums

1. G. Subrahmanyam, M. Kalita, N. Bhattacharyya, A. Kumar, R. Kamidi, M. Chutia, R. Luikham, J.S Kumar (2022) Bioremediation of Poly-Aromatic Hydrocarbon by Application of Extremophilic Microbes. In: *Microbiomes of Extreme Environments, Vol-2: Biotechnological Applications in Agriculture, Environment and Industry*, CRC Press, Taylor & Francis (In Press).
2. M. Kalita, P.A. Sangannavar, M. Chutia, D.K. Jha, K. Sathyanarayana, J.S. Kumar, G. Subrahmanyam (2022) Microbial biodesulfurization: a sustainable technology for refining fossil fuels. In: *Microbial Resource Technologies for Sustainable Development*, Elsevier Publication (Eds. J. Singh and D. Sharma, pp. 333-351 (ISBN: 9780323905909).
3. G Subrahmanyam, A Kumar, SP Sandilya, M Chutia, AN Yadav (2020) Diversity, Plant Growth Promoting Attributes, and Agricultural Applications of Rhizospheric Microbes. In: *Plant Microbiomes for Sustainable Agriculture* (eds. A.N. Yadav et al.), Springer Nature Switzerland. pp.1-52 (ISBN 978-3-030-38453-1).
4. G Subrahmanyam, M Chutia, R Das (2019) Advanced molecular methods in the diagnosis of microbial pathogens of *Antheraea assamensis* Helfer. In: *Molecular Insect Science*, Edited L.K. Hazarika and S. Kalita, Mahababahu publication, (ISBN: 978-81-928703-8-0), pp: 27-34.
5. A Borgohain, K Das, M Chutia (2013) Antibacterial activity of host plant volatiles against the bacterial pathogens of muga silkworm *Antheraea assamensis* Helfer. In: *Proceedings of the national seminar on Recent Developments in Natural Sciences* held at DKD College, Dergaon, Golaghat (Assam) during 20-21st January, 2012. pp. 153-156 (ISBN 978-81-924389-0-0)

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6. K Das, D Goswami, NJ Dhar, NI Singh, M Sankar, M Chutia (2011) Muga Silkworm (*Antheraea assemensis* Helfer): Technology intervention and silkworm production. In: *Emerging Areas of Seri-Biotechnology* (eds. M Chutia, K Das), Central Muga Eri Research & Training Institute, Jorhat, Assam (India), pp. 47-56.
7. RK Rajan, M Chutia (2011) Recent advances in Seri-Biotechnology. In: *Emerging Areas of Seri-Biotechnology* (eds. M Chutia, K Das), Central Muga Eri Research & Training Institute, Jorhat, Assam (India), pp. 67-81.
8. M Chutia*, N Bhattacharyya, P Deka Bhuyan, P Baruah (2009) Plant based essential oil on *in vitro* growth and sporulation of *Bipolaris oryzae* causing brown spot disease of rice. In: Proceedings of national seminar on *Bio-resources of Northeast India: Industrial Potentials and Intellectual Property Rights Issues*, (In Press).
9. RC Saikia, M Chutia, JJ Mahanta, MG Pathak, PK Boruah, TC Sarma (2008) Seasonal and diurnal variation in oil yield and its constituents of *Cymbopogon winterianus* Jowitt. In: *Proceedings of 53rd Annual Technical Session*, Assam Science Society. Guwahati (Assam). p. 84-91.

Books

1. M. Chutia, R. Kumar, B.K. Singh (2017) Techniques and technologies in Muga and Eri culture. CMER&TI, Central Silk Board, Jorhat, Assam (ISBN 978-81-932697-3-2).
2. B.K. Singh, M. Chutia (2016) Frequently asked questions on Muga and Eri culture. CMER&TI, Central Silk Board, Jorhat, Assam.
3. M. Chutia, N. Bhattacharyya (2008) Kathfulla Ki Kiya aru Kenekoi (*A book on mushroom in Assamese*), Sahitya Ratna Prakshan, Panbazar, Guwahati.
4. R. Das, M. Chutia (2016) Muga khadya brikhyar apakari puk and bemar thotha lobologia habodhanota (In Assamese). CMER&TI, Lahdoigarh.
5. M. Chutia, B.K. Singh (2017) Compendium of technologies. CMER&TI, Central Silk Board, Jorhat, Assam.

Patents Granted/Filed

1. A novel herbal antifungal formulation against dermal infection (2007) M. Bhuyan, J.J. Mahanta, M. Chutia, P.R. Bhattacharyya, P.B. Kanjilal, N.C. Boruah, P.G. Rao. [Application No. 650/DEL/2007; Ref No.: 0289NF2006].

Edited Book / Journal / Newsletters

1. Member Editorial Team, National Seminar on "**Economic Insects of NE India: Thrust on Recent Advances in Vanya Silks**" to be held during 21-22nd February 2017 at BTC, Kokrajhar.
2. Editor, National seminar on **Recent Trends of Research & Development in Muga Culture – Idea to Action: Compendium of Seminar papers**, Central Muga Eri Research & Training Institute, Lahdoigarh, Assam (India), 2012.
3. Editor, **Emerging Areas on Seri-biotechnology** (Edited Book), Central Muga Eri Research & Training Institute, Lahdoigarh, Assam (India), 2011.
4. Editor, **Annual Report**, 2010-2019; Central Muga Eri Research & Training Institute, Central Silk Board, Lahdoigarh, Jorhat, Assam (India).

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5. Editor, **Annual Report**, 2010-2017; Central Muga Eri Research & Training Institute, Central Silk Board, Lahdoigarh, Jorhat, Assam (India).
6. Joint Editor, **CMER&TI Sericultural News**, Vol: 4 No. 1, 2009; Vol: 5 No. 1, 2009; Vol: 5 No. 2, 2009
7. Joint Editor, **Annual Report**, 2009; Central Muga Eri Research & Training Institute, Central Silk Board, Lahdoigarh, Jorhat, Assam (India).

Projects ongoing / completed

1. Isolation and characterization of lytic bacteriophages infecting bacterial pathogens of muga silkworm, *Antheraea assamensis* Helfer [**As PI, funded by DST, New Delhi; Total budget: 37.6 lakhs**].
2. Utilization of mulberry leaf for production of mulberry tea and value addition of green tea [**As CoPI, funded by CSB, Bangalore; Total budget: 30.498 lakhs**]
3. Characterization and efficacy of bacterial antagonists against *Alternaria ricini* infecting Castor in North-eastern India (**As PI; funded by CSB, Bangalore; Total Budget: 15.25 lakhs**).
4. Advanced Level Institutional Biotech Hub (**Coordinator; funded by DBT, New Delhi; Total Budget: 69.00 lakh**].
5. Characterization, Transmission and Cyto-Pathology of Infectious Flacherie and Cytoplasmic Polyhedrosis Virus in Muga Silkworm, *Antheraea assamensis* Helfer [**PI; funded by DBT, New Delhi; Total Budget: 37.286 lakh**].
6. Enhancement of rural economy through technology intervention for sustainable Muga culture in Upper Brahmaputra Valley of Assam (**[Co-PI; funded by DBT, New Delhi; Total Budget: 37.022]**).
7. Next generation sequencing studies and bioinformatics analysis of microbiome of flacherie infected *Antheraea assamensis* Helfer for developing effective disease control measures (**Co-PI; funded by CSB, Bangalore; Total Budget: 20.09 lakhs**).
8. Studies on the cross transmission of pebrine spores from lepidopteran caterpillars to muga silkworm (*Antheraea assamensis*, Helfer) and its control measures (**Co-PI; funded by CSB, Bangalore; Total Budget: 15.55 lakhs**].
9. Etiology of bacterial diseases and molecular characterization of the pathogens of muga silkworm (*Antheraea assamensis* Helfer) from North East India (PI; DST, New Delhi; Total Budget: 27.5132).
10. Forecasting and forewarning for pest and diseases of muga host plants and silkworm. (Project Code: PRE 5852; Co-PI; Central Silk Board, Bangalore; Total Budget: 19.138 lakh).
11. Collection, characterization, evaluation and conservation of perennial host plants for eri silkworm rearing. (Project Code: PRE 5853; Co-PI; Central Silk Board, Bangalore; Total Budget: 10.04 lakhs).

Workshop / seminar / training programmes organized

1. **Organizing Secretary** of the DBT sponsored national workshop cum training programme on “**Techniques and Technologies of Seri-biotechnology**” held at CMER&TI, Lahdoigarh, Assam (India) during 27 March – 2nd April, 2018.
2. **Convener** of the DBT sponsored national workshop cum training programme on “**Soil Health Management**” held at CMER&TI, Lahdoigarh, Assam (India) during 3-6th April, 2018.
3. **Co-Organizing Secretary** of the National Seminar on “**Vanya Sericulture and Seri-Biodiversity for Economic Upliftment (SeriBioEcon – 2018)**” held at CMER&TI, Lahdoigarh, Assam (India) during 12th -13th March, 2018.

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4. **Organizing Secretary** of the DBT sponsored national workshop cum training programme on “**Sericulture and Seri-biotechnology**” held at CMER&TI, Lahdoigarh, Assam (India) during 28-30th March 2017.
5. **Joint Organizing Secretary**, National seminar on “Economic Insects of NE India: Thrust on Recent Advances in Vanya Silks” organized by CMER&TI, Lahdoigarh and Directorate of Sericulture, BTC at Kokrajhar during 21-22nd February 2017.
6. **Organizing Secretary** of the DBT sponsored national workshop cum training programme on “**Advanced diagnostic of infectious disease in insects**” held at CMER&TI, Lahdoigarh, Assam (India) during 21-23rd March 2016.
7. **Coordinator** of the DBT sponsored national workshop cum training programme on “**Diversity, exploration, taxonomy and management: Advanced tools and techniques for lepidopteran insects**” held at CMER&TI, Lahdoigarh, Assam during 27-29th March 2014.
8. **Organizing Secretary** of the DBT sponsored national workshop cum training programme on “**Advanced techniques and Technologies in Sericulture**” held at Central Muga Eri Research & Training Institute, Lahdoigarh-785700, Jorhat, Assam (India) during 19-21 March 2013.
9. **Organizing Secretary** of the DBT sponsored national workshop cum training programme on “**Emerging areas of Seri-Biotechnology**” held at Central Muga Eri Research & Training Institute, Lahdoigarh-785700, Jorhat, Assam (India) during 27-29 September 2011.
10. **Member of Organizing Committee and Lead author of Editorial Team** of the national seminar on **Recent Trends of Research & Development in Muga Culture – Ideas to Action** held at India Institute of Entrepreneurship, Guwahati during 3-4th May 2012.

Academic / professional training course undertaken

1. Online training programme on “**GeM portal: applications for official purposes**” at organized by MESSO, Central Silk Board, Guwahati on 23 March 2022.
2. Online training programme on “**Disciplinary Proceeding**” organized by Central Silk Board, Bangalore on 27 October 2021.
3. Online Training Programme on “**Extension Management Approaches for Promotion of Sericulture Industry**” organized by manage, Hyderabad during June 15th-18th 2021.
4. NAHEP sponsored Skill Development Workshop on ‘**Molecular Biology in Plant Pathogenesis and Disease Management**’ organized by Department of Plant Pathology, Assam Agricultural University, Jorhat during 9th -16th March, 2021.
5. DBT sponsored training programme on “**Bio-safety and bio-security for handling and identification of zoonotic pathogens**” at ICAR - National Institute of High Security Animal Diseases, Anandnagar, Bhopal during August 3-8, 2016.
6. Workshop on “**Effective Management of Intellectual Property Rights in Biotechnology by Universities and Research Institutes in Assam**” organized by Biotech Consortium India Limited (BCIL), DBT, New Delhi and held at College of Veterinary Sciences, Assam Agricultural University, Khanapara, Guwahati during 16-17th October 2014.

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7. Workshop on “**Confocal and Live Imaging Microscopy**” DST sponsored sponsored by DST, New Delhi and held at Advanced Instrumentation Research Facility (AIRF), **Jawaharlal Nehru University**, Delhi, India during 27-29th January 2014.
8. Training Programme on “**Foundation Training programme for CSB Young Scientist**” jointly organized by Central Silk Board, Bangalore and National Academy for Agricultural Research and Management (NAARM) held at NAARM, Hyderabad during 4-18th January 2011.
9. Training course on “**Viral Genomics and Transgenic Development**” Sponsored by Indian Council for Agricultural Research (ICAR) and organized by Advanced Centre for Plant Virology, Division of Plant Pathology, **Indian Agricultural Research Institute**, New Delhi during 8-28th September 2010.
10. Workshop on “**Modeling Biological Systems**” organized by Physics and Applied Mathematics Unit, **Indian Statistical Institute, Kolkata** and Department of Physics, **North Eastern Hills University**, Shillong during 25-29th October 2010.
11. Training programme on “**Handling of Phase Contrast Microscope and its different staining techniques**” held at Silkworm Seed Technology Laboratory (SSTL), Kodhati, Bangalore from 24-30th June 2009.
12. Winter School on “**Microbial Genome Typing**” sponsored by University Grant Commission (UGC) and organized by **UGC-Networking Resource Centre in Biological Science**, School of Biological Science, Madurai Kamraj University, Madurai during 10-24th December 2008.
13. National Workshop on “**Application of Remote Sensing and Geographical Information System (GIS) in Sericulture Development (Phase II)**” organized by NESAC, Shillong and Central Silk Board, Bangalore on 4 & 5th Aug., 2019
14. Workshop on “**Application of Remote Sensing & GIS and Geo-tagging in Sericulture Development in BTC**” organized by Directorate of Sericulture, BTC on 6th & 7th Sept., 2019.

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